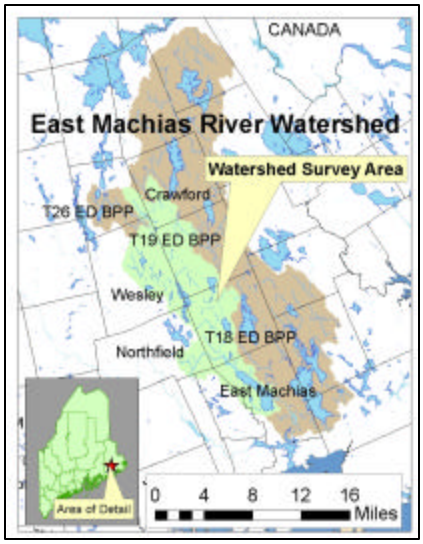
NonPoint Source Times

Volume 15 , Issue 2 Spring 2006

East Machias River Atlantic Salmon Habitat Improvement

PROBLEM:
Indigenous Atlantic Salmon are considered endangered in the East Machias River watershed. The river is designated in the "Maine Atlantic Salmon Conservation Plan for Seven Maine Rivers" March 1997, and "Maine Non-Point Source Priority Watershed List" as one of eight rivers with a distinct population segment of Federally endangered wild Atlantic salmon.



Non point source pollution ("NPS") is considered a threat to Atlantic salmon because sediment may fill in the spaces found in coarse gravel stream bed (a state referred to as "embeddedness") and decreases the viability of spawning and juvenile salmon over-wintering habitat. Initial surveys indicate that direct stream bed disturbance at vehicle fording sites and soil erosion from logging roads are significant sources of NPS pollution and there is a need to immediately prevent vehicles from fording the river and systematically identify other NPS sites for future BMP implementation.

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PROJECT DESCRIPTION:
This project eliminated direct disturbance of Atlantic salmon spawning and rearing habitat in the vicinity of the Munson Rips ATV fording site by constructing an alternative bridge, restored 168 sq. feet of river habitat by removing remnants of an old bridge at the fording site, reduced sedimentation in the vicinity of Munson Rips by implementing BMP's at five nearby NPS sites, and utilized summer interns to perform a comprehensive NPS survey of the East Machias River watershed from Great Meadows downstream to Hadley Lake. All forestry roads within this segment were surveyed and ditches, stream crossings, and debris dams were documented where it was determined that sediments are washing into the tributaries or the main stem of the East Machias River. Each identified site had its GPS coordinates taken, was photographed, and a short explanation of the observed conditions were noted. All sites were prioritized as to cost of implementation and habitat impact as low, medium, or high. The interns were trained and supervised by the Washington County Soil and Water Conservation District with assistance from Maine DEP and Natural Resource Conservation Service. All identified sites were field checked by a professional to assess specific BMP's needed for implementation.

PROJECT OUTCOMES:

- A 6 foot wide, 110 foot long ATV/Snowmobile bridge was constructed over the East Machias River at Munson Rips, replacing a ford that was directly disturbing salmon spawning and rearing habitat.
- The remnants of an old bridge at Munson Rips were removed, restoring 168 square feet of river habitat.
- A vehicle ford at the outlet of Round Lake, upstream of Munson Rips, was blocked off to protect salmon habitat.
- Washington County Soil & Water Conservation District ("WCSWCD") interns surveyed approximately two-thirds of the East Machias River watershed.
- The survey resulted in over 200 NPS sites being identified
- The survey produced the "East Machias River Watershed Non Point Source Pollution Inventory" report used by WCSWCD and Project SHARE for future implementation of NPS sites.

Project Duration June 2002-October 2005.
319 Grant $60,000.00 **Local Match** $79,100.00

PROJECT PARTNERS:
WCSWCD, Natural Resource Conservation Service, & US EPA

CONTACT INFORMATION:
Greg Beane, DEP, Bangor Office-(207) 941-4292
Nate Pennell, WCSWCD-(207) 255-4659

The following is an excerpt from the NPS 2005 Annual Report which should be available later this spring.

Request for Proposals

Nonpoint Source Pollution Control Projects
Maine Department of Environmental Protection

Maine DEP plans to issue a Request For Proposals for Nonpoint Source Projects in early April 2006. NPS Projects help restore or protect lakes, streams, or coastal waters that are polluted or considered threatened. DEP anticipates issuing grants for NPS Projects with FFY 2007 monies provided to Maine by the U.S. Environmental Protection Agency under the Section 319(h) of the Federal Clean Water Act. Maine public organizations such as state agencies, soil and water conservation districts, regional planning agencies, watershed districts, municipalities, and nonprofit 501(c)(3) organizations are eligible recipients.

The RFP is for watershed-scale projects that benefit waters listed as "NPS Priority Watersheds". A portion of funds will be allocated for projects crafted to help restore 303(d) listed waters that have an approved TMDL analysis. Three types of projects will be invited: Watershed Projects, Watershed Surveys, and Development of Watershed Management Plans. DEP plans to devote about 80% of the funds for NPS Watershed Projects. A NPS Watershed Project focuses on implementing actions in a watershed to improve or protect a waterbody. Projects need to be designed so that BMPs are implemented in the watershed to achieve a significant reduction in NPS pollutant loading.

There is considerable opportunity to obtain a NPS grant to help protect or restore Maine's clean waters. Under last years RFP, DEP received 23 proposals. DEP will award about $770,000 for 14 projects that will continue or start watershed protection work this spring.

The 2007 RFP will be posted at DEP website www.state.me.us/dep/blwq/grants.htm#319
FMI contact: Norm Marcotte, Maine Department of Environmental Protection, Division of Watershed Management, 17 State House Station, Augusta, ME 04333, norm.g.marcotte@maine.gov or 207-287-7727

Photo Gallery

The NRCS Photo Gallery contains natural resource and conservation related photos from across the USA. The Gallery is a joint project between NRCS Conservation Communications and the NRCS Information Technology Center in Ft. Collins, Colorado.

Photos in the Gallery are available free of charge in two common image formats: TIFF or JPEG. Image resolution is generally 1500 x 2100 pixels (5" x 7" at 300 dpi). TIFF images are 32 bit CMYK color, ranging from 6 mb to 12 mb in size. JPEG images are 24 bit RGB color ranging from 200 kb to 400 kb in size.

If you use any of these photos in a publication, on a web site, or as part of any other project, please use one of the following credit lines:

- Photo by (photographer's name), USDA Natural Resources Conservation Service.
- Photo courtesy of USDA Natural Resources Conservation Service.
- Photo courtesy of USDA NRCS.

NRCS Photo Gallery can be found at http://photogallery.nrcs.usda.gov/Index.asp

Stream Watershed Surveys

The following information is lifted from the notes from the Annual Watershed Round Table event held in the fall of 2005.

Moderators: Jeff Varricchione and Mary Ellen Dennis

A. Background and Challenges

- Surveys are an excellent way to raise awareness and build interest in stream protection.
- Stream issues are different and more complex than lake issues. Lakes usually just focus on sediment. Stream pollutants include nutrients, toxics, bacteria, temperature, stormwater quantity, encroachment on riparian areas, floodplains, erosion and fish passage.
- What should volunteers look for? – Look carefully at stream crossings and outfalls.
- What do you call a site?
- Should you do a habitat survey along with a watershed survey? – Need to tailor projects to what the group wants.
- How do you address property issues? – Send out letters to watershed residents. Determine if resource is navigable or non-navigable.

B. Recent Survey Projects and Experiences

- **Goodall Brook, Sanford –** Forrest Bell organized a survey in 2004 of the Upper Great WorksRiver Watershed, which includes Goodall Brook in Sanford.
  - They modified lake survey forms to include more pollutants than just sediment.
  - Due to private property issues, they pretty much stayed on roads or asked permission.
  - They used the same methods as in lake survey, trains volunteers to look for issues in assigned areas.
  - Impervious cover analyses were used to look for hotspots in the watershed.

- **Moose Brook, Auburn –** Zach Henderson conducted a survey in 2005 on this urban stream at the headwaters of the Royal River.
  - It was a challenge to generate public interest and volunteers for the project. Few people were interested in this small urban stream.
  - It was more of a buffer/channel survey, although they did not do an in-stream habitat walk.
  - Aerial photos from Auburn GIS were a good source of information about buffers and potential hotspots.
  - Volunteers focused on major issues without getting too technical in their documentation.
  - They met with industrial landowners at hotspots such as gas stations.

C. Getting Community Involvement

Towns

- Make connection through the MS4 program.
- Provide free technical assistance.

Businesses

- Provide free technical assistance and knowledge to improve practices.
- Make connection with DEP's new Industrial Stormwater Program.
- Promote Green Business Award – like in City of Auburn.
- Promote public image of businesses that get involved.

Volunteers – Approach local schools and colleges for student and teacher volunteers.

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D. Guidance Document and What to Include

- The group agreed that there is a need for guidance on conducting stream surveys. It could be a booklet similar to the lake watershed survey document (10 votes) or an addendum focused on stream surveys (2 votes).
- The following people volunteered to serve on a work group to pursue this stream survey guidance: Shawn Biello, Heather True, Betty Williams, Don Kale, Jeff Dennis, Jeff Varricchione and Mary Ellen Dennis.
- It should include a section on how to determine what kind of survey to conduct and initial assessment tools:
    - Rapid survey as first step
    - Is the stream a TMDL? – What else is already in progress?
    - Aerial photos and landuse maps
    - Urban or rural watershed?
    - OGIS – ortho viewer to get a sense about the land uses
    - Riparian zone assessment – may have shading but shrubs, not canopy

Note: Since the fall meeting, Jeff & Mary Ellen with the help of others have been working on developing a manual.

Effective 319 Projects

Note: The following are notes from the 2005 Fall Annual Watershed Managers Roundtable.

Presenter: Sandra Facieullo Moderator: Norm Marcotte

A. EPA Perspective – Sandy has been working with Maine's 319 program since the first grant award in 1990 and watched the program evolve over time. She said that Maine's program is known for its robust watershed approach and strong partnerships. The DEP's Division of Watershed Management is structured to help support the 319 program and helps keep things moving ahead. It is a model for other New England states. She thanked Norm for his steady leadership.

B. Push for Qualifying Success – Sandra talked about the growing need for metrics to qualify success and justify the program so that program funding is not cut. We have always recognized that water quality changes can't be assessed in a few years, so we have quantified success by tracking the numbers of BMPs installed etc.

- **Success Stories** - Under pressure to demonstrate the program's success, EPA published EPA 319 Success Stories in 1994, 1997 and 2002.
- **GRTS** - The Grants Tracking System (GRTS) was also set up to track pounds of phosphorus, tons of sediment, acres of wetland protected, feet of streambank protected etc. Information that sponsors submit on the new pollutant reduction forms is entered into GRTS.

C. Focus on TMDLs

- **OMB's Program Assessment and Rating Tool –** The federal Office of Management and Budget develop a tool to score performance of over 200 federal programs. As a result of this assessment, EPA now has a goal of partially or fully restoring 250 impaired waterbodies by 2008 and 700 impaired waterbodies by 2112. These goals have prompted the focus on TMDLs.

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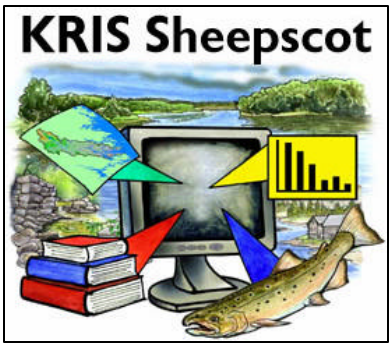
- **Success Stories –** EPA is now profiling projects that have met this goal in the website http://www.epa.gov/owow/nps/Success319/ . There are about 26 to date.
- **The Challenge for Maine –** In Maine, the 319 program focuses on protection as well as restoration of impaired waters. How can you demonstrate success with a protection project? How can you increase chance for "success" in restoration projects?
- If OMB goals are not met, there could be significant cuts to the 319 program in the future. However, there is strong EPA support for the 319 program.

D. Future Directions and Opportunities – The group discussed future directions for Maine.

- **Project Selection -** To be successful with restoration projects, it is important to think about public commitment, setting realistic goals, working in phases and working at the right watershed scale. Think about working in watersheds with significant pre-project data.
- **Streams -** It may be easier to see improvements in streams within a few years. However, many of the TMDL streams are urban, unknown and not valued by the public.
- **Bond Brook** could be an example of a low-hanging fruit with 2-3 segments on the TMDL list. A project could focus on implementation there.
- **Sebasticook Lake** may well become a success story. The secchi readings look good and there haven't been blooms in recent years. This is a result of NPS work as well as the removal of a point source. Another few years are needed to see if water quality remains stable.
- **Highland Lake (Windham)** has been stable, but not improving for a few years. Sandy will talk to headquarters to see if this can count as a success.
- **Cobbossee Lake and Annabessacook Lake –** are also looking like success stories since they are meeting secchi standards. Work has been happening in both places for over 30 years.

Sheepscot Data Online



As a grass roots organization, the SVCA has long seen the need for a web-based education tool available to everyone involved in community-based conservation. At the 2001 SVCA-sponsored workshop "Protection and Restoration of Salmon Habitat" in Orono, we were introduced to the Klamath Resource Information System (KRIS), a program used widely to support Pacific salmon recovery, by two of its Institute for Fisheries Resources developers, Bill Kier and Pat Higgins. Thanks to funding from the National Fish and Wildlife Foundation and the Maine Atlantic Salmon Commission, the new Sheepscot KRIS online database is now complete and ready for your investigation.

The KRIS database was designed to include all existing data (old and new) and historical information, put into a database, and made available in a user-friendly mode to watershed groups, land owners, and local, state and federal government. The ability to integrate GIS maps, historical data, photos and newspaper articles as well as scientific data into one user-friendly system makes this a unique and invaluable tool. Both updated and historic data, some of it previously unpublished, from the many state and federal agencies concerned with salmon restoration as well as local efforts at conservation can be accessed in this single database. This allows the SVCA and others to stay current in issues concerning salmon conservation. It is an invaluable source of data and information for report creation and helping groups respond to specific requests. It eliminates the need for each individual group to contact every agency for the most recent studies, for instance, redd locations or return counts, and therefore saves agencies from answering the same question repeatedly. It is

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also a great source for students needing information for a school assignment or adults looking for understanding of current regulatory issues and concerns. Most importantly, it has become a tool for all those concerned with salmon to make the case to the public that efforts to protect this one species are beneficial to all species, including humans.

While the Sheepscot KRIS is a prototype that focuses on information specific to the Sheepscot, it is quite applicable to the other Maine salmon rivers. Basic sections of the database explaining the salmon lifecycle, the effects of sediment on salmon rearing, and the effects of increased temperature or decreased oxygen on salmon survival are applicable to all rivers. For those of us interested in the long history of human activity on the river, there are several wonderful photographs of the dams along the Sheepscot.

To see for yourself, please go to: http://www.krisweb.com/krissheepscot/krisdb/html/krisweb/index.htm We also have the entire database on a 2 CD set, which includes access to a simple GIS mapping system unavailable on the web. These CD's are free, just contact Kristin at 586-5616 for a copy.

Thanks to Kristin Pennock for submitting this article. Kristin is with Sheepscot Valley Conservation Association., 624 Sheepscot Road, Newcastle, ME 04553. Phone (207)586-5616 or kristin@sheepscot.org

30th Annual Meeting of NEAB

30th Annual Meeting of the New England Association of Environmental Biologists to be held in Maine March 29-31, 2006. Hosted by the State of Maine DEP to be held at Bethel Inn and Country Club in Bethel, Maine.

This 30th annual meeting will have several special features.

- NEAEB will be held following, and partly in conjunction with, the annual meeting of the New England Biological Assessment of Wetlands Workgroup (NEBAWWG). Hosted by NEIWPCC and at the Bethel in from March 27th-28th. See http://www.neiwpcc.org/Index.htm?nebawwg2006/index.htm for additional information on the NEBAWWG meeting.
- NEAEB will have papers contributed on the complementary work of the New England tribes.
- NEAEB is inviting the return of its many founders for the 30th anniversary, with a special Wednesday game show.
- The 30th anniversary marks the return of the original **Electric Eels** as they open their long-awaited Reduce-Reuse-Recycle Tour.

FMI http://www.epa.gov/ne/neaeb2006/index.html

New Minnesota Stormwater Manual

The Minnesota Stormwater Steering Committee, Minnesota Pollution Control Agency, EOR and Associates, and the Center for Watershed Protection just completed the Minnesota Stormwater Manual. It is available on line as PDF files at: http://www.pca.state.mn.us/water/stormwater/stormwater-manual.html#manual. Copies on CD will soon be available for order at this website. At this time, only very limited numbers of paper copies (3" thick binder) have been made – more may be produced if demand is expressed.

Below is text from the Manual's Forward that outlines the purpose and scope of the document:

> "This Manual provides direction and guidance for stormwater management in Minnesota. The Stormwater Steering Committee wants you, through your active use of and feedback on the Manual, to help reach our vision for stormwater management in Minnesota.
>
> The Manual is intended as a guidance document. It will help users identify and appropriately use the best practices to protect Minnesota's water resources from adverse impacts associated with stormwater runoff. Some practices in the Manual go beyond today's requirements, and are so identified. Others help to clarify how and when to use currently accepted practices to meet water quality goals. The Manual looks beyond current practices and addresses special situations such as protection of a trout stream or stormwater management in karst areas. Some practices discussed are designed to address unique site conditions and may not be readily adaptable for across-the board applications.
>
> The Manual does not establish new regulatory requirements and does not supersede existing local, state or federal requirements. Because the Manual combines standard practices with innovative and site specific recommendations, it is strongly recommended that regulators use this Manual only as supporting guidance and not wholly incorporate the Manual by reference in regulatory requirements."

Clean & Clear—Vermont's Action Plan

VERMONT CLEAN AND CLEAR

PROGRAM OVERVIEW AND VERMONT'S FISCAL YEAR 2006 FUNDING

Year two of the Governor's Clean and Clear Action Plan begins with renewed commitment to the accelerated phosphorus reduction in Lake Champlain and Vermont's other waterways. The plan calls for phosphorus reduction actions by 2009, rather than by 2016, the EPA approved target date.

At a time of considerable budget constraints, the Vermont Legislature supported Governor Douglas's request for increased spending on important programs that are helping to improve water quality across the state.

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Much of the funding for Clean and Clear is dedicated to stopping non-point source pollution, which comes from eroding streams, farm and stormwater runoff. **See table showing Vermont's Fiscal Year 2006 funding.**

The $1.25 million for stream stability projects is a record and is more than double last year's appropriation. Eroding stream banks are a major source of phosphorus loading in the state's waterways. This program seeks to reduce phosphorus through a comprehensive river management program including the elements of assessment, protection, management, restoration and education.

Another element of the Clean and Clear program is about managing stormwater. This program seeks to ensure that most new impervious surface development is designed to meet state of the art environmental standards. And, the stormwater management program is also tasked to developing clean up plans for the 17 watersheds which are impaired by stormwater pollution.

The Erosion Control at Construction Sites program offers assistance to contractors to reduce soil loss as well as monitoring of construction projects for compliance. Boosting the appropriation for this program from $108,000 to $225,000 means that assistance and monitoring can be increased while the time contractors have to wait for permits will decrease.

Vermont's contribution to the Agricultural Best Management Practices program doubled to $1.8 million dollars. Federal funding for this program was more than $6.6 million, so there will be a lot more money to help farmers with manure pits, buffer strips, waste management systems, alternative manure technology, integrated crop management and other programs designed to reduce the amount of phosphorus rich nutrients flowing into waterways.

Buffer strips and manure management structures may be among the required changes for some farms when Vermont's Medium Farm Operation Rules are adopted early next year. Medium sized farms will likely have to undergo many of the anti-pollution regulations required of large farms in order to improve water quality.

The Conservation Reserve Enhancement Program, which pays farmers to take strips of land adjacent to streams out of production, is undergoing changes this year. Due to rising property values, the level of payments has had to be increased. That process requires federal approval so there has been a one-year slowdown in that program, but is expected to be ramping back up to full speed in the 2007 budget year.

The Better Backroads Program, designed to assist towns in curbing the sedimentation and phosphorus flowing from the state's back roads, received a $108,000 overall increase.

One of the most important means of improving water quality is the advancement of Watershed Action Planning. In 2004, a watershed coordinator was hired for the Missisquoi Bay Watershed. In the months since, a watershed council has formed and has begun work planning future projects while existing projects continue to make headway. The watershed coordinator has brought volunteer groups and stakeholders together in a collaborative manner that will build consensus in watershed planning. Two more watershed coordinators will be hired this year to expand watershed action planning in other parts of Vermont.

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Another way that volunteers help in the effort to restore water quality is through the Vermont Lay Monitoring Program. Water samples obtained by the state's network of volunteer monitors help track trends in phosphorus content and other forms of pollution. These monitors also take water clarity readings. The volunteer monitors are a crucial part of the water quality network in Vermont.

The Wetlands Restoration program last year committed about $170,000 to purchase and restore wetland property which had long ago been converted to farm use. Another $80,000 was committed to the development of a comprehensive wetlands restoration plan. There's another $250,000 this year to restore wetlands which help filter out phosphorus from nearby streams.

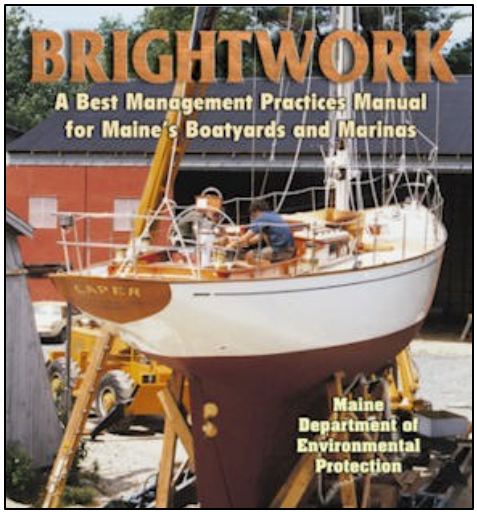
The Governor's Clean and Clear Action Plan is about more than budgets and state programs, however. We want to encourage you and your neighbors to think differently about how your daily activities can impact water quality, whether it's using less fertilizer, containing rainwater and erosion or just picking up pet waste. Click on the "**How You Can Help**" section for more tips on your contribution to this vital effort.

Article taken from: http://www.anr.state.vt.us/cleanandclear/overview.htm

Brightwork - A BMP Manual For Boatyards & Marinas

The "Brightwork" best management practices manual has been a number of years in revision by a dedicated group of people including members of industry, environmental advocacy organizations and regulatory departments. We fully expect this manual to evolve over time and so will publish updated sections periodically.

One part of Section 2 is missing: the section on boat bottom washing. This issue continues to provide particular waste management challenges, but should be published by summer 2006. Print copies of the new section will be mailed to those having full print copies of the manual. An electronic version will be posted on this site when ready.



Availability of CD and hardcopy versions of this manual

In order to reduce costs, full print copies of the BMP manual (including the CD) are available only to Maine boatyard and marina owners and operators, select regulatory representatives and other states. The Brightwork CD, containing the full text of the manual, reference material, and electronic forms is available free to anyone.

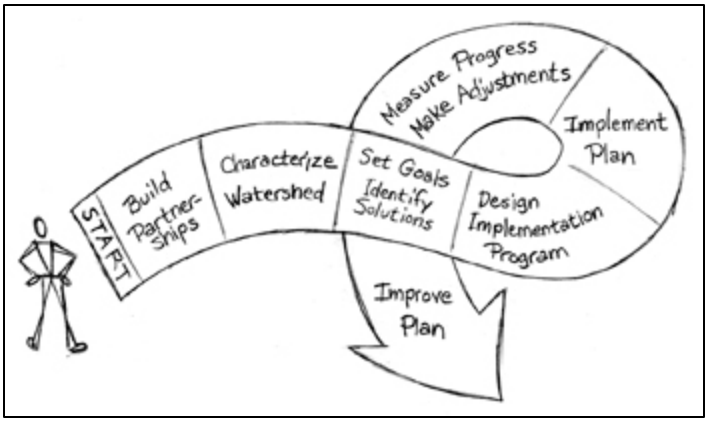
- To request a full manual (including CD), or a CD, contact Pam Parker in writing or via e-mail at the address below.

Please send any questions or comments regarding the boatyard and marina best management practices, or the Brightwork manual to:

Pam Parker, Maine DEP, 17 SHS, Augusta , ME 04333-0017. 207-287-7905 or Pamela.D.Parker@Maine.gov

Watershed Planning Handbook Published

The Nonpoint Source Control Branch is proud (and relieved) to announce that we have just published the draft Watershed Planning Handbook (more completely titled "Handbook for Developing Watershed Plans to Restore and Protect our Waters") on our web site, at http://www.epa.gov/owow/nps/watershed_handbook/. Printed versions should become available in the near future. Please look for more formal announcements that will be forthcoming.



The Handbook, a slim 400-plus page-turner , provides detailed information that is intended to assist all manner of watershed planners, and others whose work intersects (or should intersect) with watershed planning issues, on virtually all aspects of the watershed planning process. The emphasis is on the NPS aspects of watersheds, but much of the information is more broadly applicable. The focus is on technical issues, but there is also a generously sized chapter on how to "Build Partnerships". Overall, it is designed to take the user through each step of the watershed planning process, including watershed monitoring and assessment, community outreach, selection and application of available models, BMP effectiveness data bases, implementation, feedback and plan adjustment, and more. The Table of Contents on the Home Page gives you a good idea of the flow of the document. While the size may be daunting, you can easily home in on parts that are most relevant to your immediate needs.

I would like to personally acknowledge and thank Stuart Lehman for his leadership of this project for several years and congratulate him for bringing this important and multi-faceted project to fruition. I would also like to thank the many Headquarters, Regional, State, and Federal agency staff who have reviewed and commented on previous drafts of the Handbook to help assure that it covers the appropriate basis in a comprehensible manner and that it addresses user needs.

The Handbook is published in a "very polished draft" mode; we look forward to "finalizing" it next year after we get feedback and comments from the user community on how the Handbook "works" for them. (Stuart already has a list of enhancements that he would like to work on this year.) In reality, though, because the Handbook is a live Internet-based document, we can, and intend to, modify it periodically to incorporate new information or to enhance it in other ways as appropriate.

We really are interested in getting feedback, which preferably begins with the words "Congratulations on your excellent . . . . " Feel free to complete the sentence as appropriate. Seriously, this document will be successful only if it is widely used and contributes to watershed restoration and protection. Please let us know how it can be improved.

MAILING ADDRESS:
Dov Weitman, Chief, Nonpoint Source Control Branch, Mail Code 4503T, 1200 Pennsylvania Ave. NW, Washington, D.C. 20460 or weitman.dov@epa.gov

Narraguagus River Water Quality Plan

The Narraguagus River Water Quality Monitoring Plan is now available on the Project SHARE website: http://salmonhabitat.org/projects.htm

The project, which was funded by the National Fish and Wildlife Foundation, is part of a larger Maine Salmon River Water Quality Planning Initiative that focuses on multi-agency cooperative monitoring and data sharing. The goal of the project is to improve coordination of water quality monitoring (WQM) activities among governmental agencies and conservation organizations within the rivers comprising the Gulf of Maine Distinct Population Segment (DPS) of Atlantic salmon. The Sheepscot River WQM Plan was completed in 2005 and the Pleasant River WQM Plan will be completed in 2007.

The plan, which is adopted and signed by seven lead cooperating agencies and organizations, will be used to develop agency-specific and staff workplans, develop proposals for funding, direct future research, and guide restoration efforts and recovery plan implementation.

Information for the development of the plan was gathered during nine workgroup sessions in which WQ indicators were reviewed and recommendations addressing future monitoring were developed. At least 13 different government agencies and conservation organizations participated in the project and contributed presentations, text, and data. The plan provides 75 action items addressing administration, quality assurance and quality control, project planning, experimental design and analysis, and restoration and management. The action items are prioritized, and lead and partnering agencies have been assigned to each.

The website includes:

1) the Narraguagus WQM Plan (PDF),
2) five GIS maps depicting WQM sites and areas of WQ concern (PDF)
3) the Narraguagus WQM Index which describes each agency's WQ program
For more information, please contact the Project Manager, Barbara S. Arter, BSA Environmental Consulting.

Barbara S. Arter, BSA Environmental Consulting
PO Box 141, Steuben, ME 04680. or 207-546-2018 or bsarter@panax.com

EPA Releases Four New Smart Growth Publication

EPA has released the following four new smart growth publications:

-- Protecting Water Resources with Higher-Density Development
-- Using Smart Growth Techniques as Stormwater Best Management Practices
-- Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies
-- Parking Spaces / Community Places: Finding the Balance through Smart Growth Solutions

Protecting Water Resources with Higher-Density Development (EPA publication 231-R-06-001) The U.S. Census Bureau projects that U.S. population will grow by 50 million people, or approximately 18 percent, between 2000 and 2020. This study intends to help communities better understand the impacts of higher and lower density on water resources. To more fully explore this issue, EPA

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modeled stormwater runoff from three different densities at three scales—one-acre level, lot level, and watershed level—and at three different time series build-outs to examine the premise that lower-density development is always better for water quality. The findings indicated that low-density development may not always be the preferred strategy for protecting water resources. Higher densities may better protect water quality—especially at the lot level and watershed scale.

Using Smart Growth Techniques as Stormwater Best Management Practices (EPA publication 231-B-05-00) To comply with the Clean Water Act, over 6000 communities across the nation are developing municipal stormwater permitting programs (also known as Phases I & II). Many of these communities are also implementing programs that encourage development in existing communities, redevelopment of vacant properties, promote transportation options and facilitate efficient use of land and infrastructure. "Using Smart Growth Techniques as Stormwater Best Management Practices" reviews nine common smart growth techniques and examines how they can be used to prevent or manage stormwater runoff. This publication will help communities encourage smart growth and meet the new regulatory requirements. http://www.epa.gov/smartgrowth/stormwater.htm

Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies (EPA publication 230-R-06-001) This publication focuses on the relationship between development patterns, water use, and the cost of water delivery. It reviews literature that shows how large-lot, dispersed development patterns cost more to serve because of the length of pipe required, pumping costs, and other factors. The literature also shows that large-lot, dispersed development uses more water. “Growing Toward More Efficient Water Use” concludes with policy options for states, localities, and utilities that directly reduce the cost and demand for water, while indirectly promoting smart growth. These policies offer opportunities for more efficient water use at a time when many communities face water shortages. http://www.epa.gov/smartgrowth/water_efficiency.htm

Parking Spaces / Community Places: Finding the Balance through Smart Growth Solutions (EPA publication 231-K-06-001) This report highlights proven approaches that balance parking with broader community goals. Current codes typically apply inflexible minimums that ignore community and developer priorities including environmental quality and human health. An oversupply of unnecessary parking wastes money and creates places that degrade water quality and encourage excess driving and air emissions. The highlighted solutions cover a range of supply management, demand management, and pricing strategies. Communities have found that combinations of parking pricing, shared parking, demand management, and other techniques have helped them create vibrant places while protecting environmental quality and still providing for necessary vehicle storage. http://www.epa.gov/smartgrowth/parking.htm

For FREE HARD COPIES of any of these publications, please send an e-mail to ncepimal@one.net or call (800) 490-9198. Electronic versions of these publications are available at: www.epa.gov/smartgrowth

Upcoming Events

March 22, 2006. Sponsored by Senator George J. Mitchell Center for Environmental and Watershed Research Augusta Civic Center, North Wing Augusta, Maine. FMI http://www.umaine.edu/WaterResearch/mwc/

March 29-31, 2006. 30th Annual Meeting of the New England Association of Environmental Biologists. Hosted by the State of Maine DEP. Bethel Inn and Country Club in Bethel, Maine. FMI http://www.epa.gov/ne/neaeb2006/index.html

April 10, 2006. Maine Coastal Waters Conference. FMI www.coastalwaters2006.com

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April 19, 2006. Maine Conservation Expo. Topics covered include IPM, Road Maintance, Permitting, LakeScaping, & much more. Hosted by Franklin Co. SWCD. FMI 207-778-4279

April 25, 2006. Conference on Better Roads and Parking. Augusta Civic Center, Augusta, Maine.. FMI http://www.maine.gov/dep/blwq/training/schedule.htm

May 19, 2006. Southern Maine Children's Water Festival. FMI contact Marianne Dubois 207-287-2115 or marianne.s.dubois@maine.gov

May 22-24, 2006! NEIWPCC's 17th Annual Nonpoint Source Pollution Conference will be co-hosted by Vermont's Department of Environmental Conservation; the conference will be held at the Wyndham Burlington Hotel in Burlington, Vermont. Since 1990, NEIWPCC, in partnership with its member states, has been coordinating the Annual Nonpoint Source (NPS) Pollution Conference, the premier forum in our region for sharing information and improving communication on NPS pollution issues and projects. The 3-day conference brings together all those in New England and New York State involved in NPS pollution management, including participants from state, federal, and municipal governments; consulting firms; academia; and watershed organizations. This year's conference will feature sessions on stormwater management, locally-based watershed management, and stream geomorphology. For more information about this year's conference, please visit: www.neiwpcc.org/npsconference .

June 2 & 3, 2006. 2006 New England Lakes Conference. University of Maine, Farmington. Hosted by COLA and the New England Chapter of the North American Lake Management Society. FMI David Halliwell 207-7649 or david.halliwell@maine.gov

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